

Title (en)

HEAT PIPE ASSEMBLY OF NUCLEAR APPARATUS HAVING FIBER OPTICAL TEMPERATURE DETECTION SYSTEM

Title (de)

WÄRMEROHRANORDNUNG EINER NUKLEARVORRICHTUNG MIT FASEROPTISCHEM TEMPERATURERFASSUNGSSYSTEM

Title (fr)

ENSEMBLE CALODUC D'UN APPAREIL NUCLÉAIRE AYANT UN SYSTÈME DE DÉTECTION DE TEMPÉRATURE À FIBRE OPTIQUE

Publication

EP 3721449 A4 20211006 (EN)

Application

EP 18886835 A 20181105

Priority

- US 201715830654 A 20171204
- US 2018059135 W 20181105

Abstract (en)

[origin: US2019172597A1] A heat pipe assembly of a nuclear apparatus includes a number of elongated heat pipes and a detection system having one or more fiber optic cable assemblies that are elongated and are wrapped in a helical fashion along an exterior surface of one or more of the heat pipes. The detection system further includes an optical signal generator that supplies to each, fiber optic assembly an optical signal and additionally includes a sensor that detects a number of reflections of the optical signal and generates an output. The output is usable by an instrumentation and control system to determine a number of temperatures along one or more of the heat tubes by detecting a temperature at each of a plurality of locations along each fiber optic cable assembly.

IPC 8 full level

G21C 17/022 (2006.01); **G01K 1/02** (2021.01); **G01K 11/32** (2021.01); **G01K 13/02** (2021.01); **G21C 17/112** (2006.01); **G21D 3/04** (2006.01)

CPC (source: EP KR US)

G01K 1/026 (2013.01 - KR); **G01K 11/32** (2013.01 - EP KR US); **G01K 13/02** (2013.01 - KR); **G21C 15/02** (2013.01 - US); **G21C 17/017** (2013.01 - US); **G21C 17/022** (2013.01 - EP KR US); **G21C 17/112** (2013.01 - EP US); **G01D 5/268** (2013.01 - US); **G01K 1/02** (2013.01 - US); **G01K 13/02** (2013.01 - US); **G21D 3/04** (2013.01 - EP US); **Y02E 30/30** (2013.01 - EP KR)

Citation (search report)

- [I] JP 2002048898 A 20020215 - MITSUBISHI HEAVY IND LTD
- [A] US 5004354 A 19910402 - UTTON DONALD B [GB], et al
- [A] JP 2007093413 A 20070412 - HITACHI ENG CO LTD
- See references of WO 2019112727A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

US 10734124 B2 20200804; **US 2019172597 A1 20190606**; EP 3721449 A1 20201014; EP 3721449 A4 20211006; JP 2021505868 A 20210218; JP 7098729 B2 20220711; KR 102612411 B1 20231208; KR 20200090251 A 20200728; WO 2019112727 A1 20190613

DOCDB simple family (application)

US 201715830654 A 20171204; EP 18886835 A 20181105; JP 2020530327 A 20181105; KR 20207018997 A 20181105; US 2018059135 W 20181105